CRYPTOZOOLOGY

VOL. 3 1984

Cryptozoology, 3, 1984, 1–30
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THE BIRTH AND EARLY HISTORY OF CRYPTOZOOLOGY

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ABSTRACT: Cryptozoology aims at a systematized search for unknown species of animals about which some testimonial and circumstantial evidence is available. The necessity of its development arose quite naturally in the Western world as soon as the exploration of all other lands seemed completed, thus apparently exhausting the potential source of numerous and important discoveries. This happened around the year 1800, and the new trend was urged by the growing positivism of the scientific establishment; this was, in fact, an *a priori* incredulity about so-called fabulous animals, an attitude which is as unscientific as blind gullibility. The story of the long gestation period of the new discipline of zoology is here outlined by one of the pioneers among those who have been instrumental in creating its methodology. For many years, in popular science articles or books, the problem of still unknown animals—when these were not simply debunked—had been limited to mere descriptions, based on either individual sightings or popular traditions. Cryptozoology really started to exist when well-supported attempts were made at a zoological identification of the relevant animals; that is, their classification, as accurate as possible, into the categories of the natural system. The period here reviewed extends from the first tentative efforts of a few dauntless naturalists of the early 1800's, through some encouraging triumphs, up to the actual naming of the new discipline by the author in the late 1950's, or more exactly, to the first appearance in print of the term "cryptozoology" in 1959.

INTRODUCTION

Almost until the end of the 18th Century, zoology did not need cryptozoology. A systematic search for animal species still unknown was then quite superfluous. Since European travelers, particularly from the 15th Century on, had started to explore and conquer with insatiable greed all "lands beyond," netting, trapping or just firing at random seemed amply rewarding in this perspective.

All naturalists, aflame with curiosity, eager to discover anything new, were then lending their ears to the vaguest rumors about animals apparently still unrecorded. They were all, in a certain sense, consumed with a cryptozoological spirit, although they did not need to build up a refined method to achieve their ends.

From Open-mindedness to Disbelief

Never did the zoologists of the Renaissance hesitate to admit into their catalogs or general works every animal which was spoken of in the world, even if its dried or pickled carcass—shell, skin, skull, or skeleton—was not present in the latest cabinets of curiosities or in the newborn museums of natural history. This had, of course, a disadvantage, although only a minor one: that is, to include in the manuals of zoology the descriptions and even the pictures of some lesser-known beings, often transmogrified to such an extent by tradition that the original species were no longer recognizable. In fact, it now appears that such fabulous beasts, often called "monsters" because of their extravagant and terrifying traits, were nothing but imperfectly known animals, unconsciously mythicized by our emotions, that were more or less distorted and enhanced to fit into the pattern of sundry everlasting archetypes as reflecting our fantasies, fears, cravings, prejudices, or inner conflicts (Heuvelmans 1982, 1983).

The most fantastic of these creatures—like the unicorn and the satyr, the mermaid and the sea serpent, the dragon and the basilisk, the phoenix and the roc-bird—were listed in the encyclopedias of the 16th- and 17th-Century naturalists: Edward Woton (1492–1555), Guillaume Rondelet (1507–66), Conrad Gessner (1516–65), Pierre Belon (1517–64), Ulysses Aldrovandus (1522–1605), Edward Topsell (1572–1625), and Jan Jonston (1603–75). But a hundred years later, because these animals were obviously soaked with myth, most of them had disappeared from the works of Carl von Linné (1717–78), who tried to systematize nature, and of George Louis Leclerc, Compte de Buffon (1707–88), who looked for the causes and reasons for its diversity. Not all of them, however. *Homo troglodytes,* for instance, a wild hairy man of nocturnal habits, and *Microcosmus marinus,* a tentacular sea monster so huge it could be taken for an island, were still found in the *Systema Naturae* of Linnaeus, at least in its early editions. And Buffon still believed there were tigers in Africa, and even an abominable woodsman kidnapping black girls—the Pongo, a most unlikely creature that we now classify as *Gorilla.*

There is nothing really surprising about all that. Fifty years earlier, a very learned and respected man, Bishop Erik Ludvigsen Pontoppidan (1698–1764), had devoted an important chapter of his *Natural History of Norway* (1752–53, 1755) to the three most popular stars of the present sea monsters' Pantheon: the mermaid, the Kraken and the sea serpent. Scandinavia being a land of legends, these could have been easily dismissed elsewhere as figments of Norse myth, but no contemporary scientists thought of casting doubts upon them. Even the most fantastic creatures from literature, art, or mythology of past times appeared, of course, much more matter-of-fact as soon as equally improbably animals were discovered in faraway countries,

or their remains unearthed from ancient deposits. So, in 1784 an anonymous booklet was published in Germany, which bore a most significant title: *Beschreibung, Ausführliche und Accurate, nebst genauer Abbildung, einiger vorhin Fabelhafter Geschöpfe, welche in der Heutigen Naturgeschichte berühmter Schriftsteller gänzlich Verändert und ins Licht gestellt sind* [Detailed and Accurate Description, Together With Their Right Representation, of Some Formerly Fabulous Creatures, Which in the Present Natural History of Divers Authors of Good Reputation Appear Completely Changed and Brought to Light].

It is only when sightings of such "monsters" were reported during the 19th Century (sea serpents along the shores of North America, colossal octopuses off the west coast of Africa, and even gorgeous blond mermaids around the British Isles) that some naturalists—armchair naturalists most of the time—eventually reacted with indignation, exaggerated alacrity, and sometimes violence against what they called "ridiculous fables," "travelers' tales," or "chimeras generated by simple-minded or diseased imagination." American sea serpents were branded as "Yankee humbug."

Such a brutal change of thinking by scientists of the time calls for an explanation.

Cuvier Versus Jefferson

In 1795, President Thomas Jefferson (1743–1826), who was as well-versed in the natural sciences as in politics, examined several prehistoric bones of a giant ground sloth, including an enormous claw, which had been found in a cave in Virginia. He accordingly named the animal *Megalonyx* (great claw), but he took it for a gigantic felid "more than three times as large as the lion." On the strength of the concrete evidence he had, he concluded: "If this animal then has once existed, it is probable on [the] general view of the movements of nature that he still exists." He thus felt quite justified at that time in stating: "In the present interior of our continent there is surely space and range enough for elephants and lions, if in that climate they could subsist; and for mammoths and megalonyxes who may subsist there. Our entire ignorance of the immense country to the West and North-West, and of its content, does not authorize us to say what it does not contain." He said this because, on the rocky bank of a river, there were ancient carvings of many animals, and among them "a perfect figure of a lion," not of a puma, and also because the existence of such a monster was supported by Indian traditions "considered as fables, but which have regained credit since the discovery of these bones" (Jefferson 1799). This was a perfect example of what a cryptozoological attitude is. Jefferson was wrong about the identity of his "great claw," but nobody would have thought of frowning or shrugging about his general statements.

Some 15 years later, however, things drastically changed when Georges Cuvier (1769–1832), the "father of paleontology," was rash enough to pronounce that "there is little hope of discovering new species of large quadrupeds." About fabulous animals, he even spoke with sneering irony: "I hope nobody will ever seriously look for them in nature; one could as well search for the animals of Daniel or for the beast of the Apocalypse" (Cuvier 1812).

We had entered the 19th Century, which has been dubbed "the stupid one," not without good reason. Henceforth, dogmatism, the power of authority—in fact, sheer authoritarianism (in a word, bigotry)—was to permeate science under the pretense of rationalism and an ill-digested version of positivism. The decision of what had to be accepted or rejected by science, which was then supposed to solve all man's problems—and thus accordingly was deified—seemed to be borrowed from some religious creed. Time had come for pontification, scientific taboos, and academic excommunications.

In the realm of zoology, this new trend showed itself in the true dictatorships exerted by some scientists (all the same remarkable men), such as Cuvier in France, Sir Richard Owen (1804–92) in England, and Rudolf Virchow (1821–1902) in Germany.

Skepticism Against both Gullibility and Incredulity

A few enlightened laymen, who could be considered as the "Prophets of Cryptozoology," had already anticipated this shocking attitude, and expressed their fears before the close of the 18th Century. The English novelist Oliver Goldsmith (1728–74), for instance, had stated in his essay *A History of the Earth and Animated Nature* (1774): "To believe all that has been said of the sea serpent, or the Kraken, would be incredulity: to reject the possibility of their existence would be presumption." And in 1799, the English actor and dramatist Thomas Holcroft (1745–1809) had written in a letter to a friend, after having heard of sightings of the same sea monsters: ". . . who can affirm he can mark out the boundaries of possibility? Some mariners treat these tales as absolutely false and ridiculous; others seriously affirm them to be true; and I think it is a duty to collect evidence, and to remain on this question as on many others, in a certain degree of skepticism."

As in all matters of science, skepticism is here the key word, because it sums up the true spirit of scientific research. And it is precisely because this word has so much poise that it is deliberately or unconsciously used in a false, improper, or incorrect sense by most people, and particularly by those who could be branded as "systematic debunkers." When confronted with new facts or ideas—whether unusual, amazing, disturbing, or embarrassing—they simply shrug and say that, being skeptics, they cannot believe such fantastic tales. But they are not skeptics at all: they are just being incredulous, which is quite different. The essence of skepticism is doubt. To be a true

skeptic, one has to doubt everything, even whether one's doubts are well-grounded; one neither accepts nor rejects anything off-hand; one does not express any opinion before conducting a careful and thorough examination of the evidence, and moreover of *all* the available evidence. As Jean de la Bruyere (1645–96), the French moralist, once put it in his *Caractéres* (1688): ". . . as with all things out of the ordinary, not within the common rules, there is a course to be steered between the credulous and the unbelievers."

Cryptozoology is based on the simplest common sense.

The Greatest Scientists Support the Cryptozoological Spirit

Open-minded scientists never yielded, of course, to the edicts of the 19th Century dictators of science. They went on showing real interest in all undesirable "monsters" and zealously collected every scrap of information about them. The fabled sea serpent was appearing not only in sensation-seeking newspapers during the "silly season," as it is often said, although this is completely baseless. It was regularly mentioned in scientific literature. To check it, one has just to glance through the files of some scientific journals of that period, such as the following: in Germany, Lorenz Oken's (1779–1851) *Isis, eine Encyclopädische Zeitschrift* from 1818 to 1834, and Ludwig Friedrich von Froriep's (1779–1847) *Notizen aus dem Gebiete der Natur- und Heimat* from 1821 to 1846, a periodical which was taken over by his son Robert von Froriep (1804–61) as *Tagsberichte über die Fortschritte des Natur- und Heilkunde* from 1850 to 1852; in the United States, Benjamin Silliman's (1776–1859) *American Journal of Science and Arts* from 1820 to 1835; and in England, Edward Newman's (1801–76) *Zoologist* from 1847 to 1876, and Frank Trevelyan Buckland's (1826–80) *Land and Water* from 1870 to 1882.

One of these editors, Newman, judiciously summarized the right attitude of true skeptics in his preface to the 1847 volume of his journal: ". . . the communications and quotations about 'the Sea Serpent' are well worthy of attentive perusal: it is impossible to suppose all the records bearing this title to be fabricated for the purpose of deception. A natural phenomenon of some kind has been witnessed: let us seek a satisfactory solution rather than terminate enquiry by the shafts of ridicule . . . surely it is not requiring too much to solicit a suspension of judgment on the question of whether a monster may exist in the sea which does not adorn our collections."

Among the early supporters of what was later to become cryptozoology, the greatest names of science could be mentioned. It would be a tedious task to enumerate them all, as I did in my opus on the "sea serpent" problem (1965, 1968, 1975). Let us just recall that in Great Britain, for instance, Sir Joseph Banks (1743–1820), who became the arbiter of British science as president of the Royal Society, and Sir William Jackson Hooker (1785–

1865), one of the greatest botanists of his time, both expressed their acceptance of the existence of the "sea serpent" around 1820, as Thomas Henry Huxley (1825–95), Darwin's self-styled "bulldog," would do it at the end of the same century. In the United States, the same attitude was adopted by practically all oceanographers, from Louis Jean Rodolphe Agassiz (1807–73) to the authors of the American "bible" of marine biology, *Oceanic Ichthyology* (1895): George Brown Goode (1851–96), and Tarleton Hoffman Bean (1846–1916).

The eyes of the inquisitive naturalists were not focused only on "sea serpents" during the last century. In the monumental narrative of his travels through the equatorial regions of the New World from 1799 to 1804, Baron Alexander von Humboldt (1769–1859), the "father of physical geography," expressed his doubts about the existence in South America of a large ape, around which many rumors were afloat, but he sensibly refused to consider these just as fables: "In treating them with disdain, the traces of a discovery may often be lost, in natural philosophy as well as in zoology . . . Travelers who may hereafter visit the missions of the Orinoco will do well to follow up our researchers on the *salvaje* or *great devil* of the woods; and examine whether it be some unknown species of bear, or some very rare monkey . . . which may have given rise to such singular tales" (Humboldt 1816–26, 1852–53).

The Rise in Great Britain of Surviving Fossils

In another, somewhat different vein, free-thinking scientists soon started to question the Cuvierian dogma according to which all "prehistoric" animals belong to ages gone by, have never been contemporaneous to man, and can thus certainly not be living today and possibly explain some of the present "mystery beasts."

In 1844, for instance, geologist Hugh Falconer (1808–65), after having discovered in India the fossil remains of a gigantic turtle, *Colossochelys atlas,* wondered whether the Mesozoic reptile had not survived into historical times, giving birth to the Hindu legend of the giant tortoise which supports the elephant on which the Earth rests (Falconer 1886, Falconer and Cautley 1844).

A few years later, another British naturalist, of Flemish origin, Colonel Charles Hamilton Smith (1776–1859), surmised from the traditional legends of the North American Indians that they had actually known living mastodons and giant ground sloths. Incidentally, he also supported the theory that the unicorn was a real animal, still living in remote areas of Africa, which eventually led to the discovery of the northern race of the white rhinoceros (Smith 1848).

Still later, a third British naturalist, Charles Carter Blake, author of a manual of zoology for students but nevertheless obscure, was in his turn impressed by the traditions held by the Brazilian Indians of a gigantic anthropoid ape, the *Cayporé.* He wrote: "No such ape exists in the present day; but, in the post-Pliocene in Brazil, remains have been preserved of an extinct ape (*Protopithecus antiquus*) four feet high, which might possibly have lived down to the human period, and formed the subject of the tradition" (Blake 1863).

In each of these cases, scientists were not necessarily concerned with the current existence of still-unknown animals, but more with the survival of animals, known from their fossil remains, into times where they were not suspected to be living any more, even possibly into the present time. However, as these animals were, in a certain way, "hidden" to the eyes of science, to try to search for them revealed a true cryptozoological turn of mind.

The ideas of Falconer, Smith, and Blake were taken up with enthusiasm by Edward Burnett Tylor (1832–1917), the "father of modern ethnology" (now called social anthropology). In his *Researches into the Early History of Mankind* (1865), he stressed the point that, up to modern times, popular traditions have preserved the memory of some "prehistoric" animals—let us now say more precisely of animals of the Lower Pleistocene—allegedly extinct before the coming of *Homo sapiens.*

This particular side of cryptozoological research was remarkably well defined in 1886 by geologist Charles Gould, the only son of John Gould (1804–81), the ornithologist and bird portrait artist. In his very important book on *Mythical Monsters,* he wrote: "I have . . . but little hesitation in gravely proposing to submit that many of the so-called mythical animals, which through long ages and in all nations have been the fertile subjects of fiction and fable, come legitimately within the scope of plain matter-of-fact natural history, and that they may be considered not as the outcome of exuberant fancy, but as creatures which really once existed, and of which, unfortunately, only imperfect and inaccurate descriptions have filtered down to us, probably much refracted, through the mists of time."

Incidentally, the Irish naturalist Valentine Ball (1843–95) had just published two articles in 1884, in which he attempted to identify some of the fabulous creatures of the early Greek authors, such as the pygmies, the Martikhora and the Griffin (Ball 1884a, 1884b).

A new wave of thought was spreading over British zoology.

Early Cryptozoology in Germany and France

During the last century, there was also in German scientific circles a great interest in the possible survival of ancient species allegedly extinct, as well as in the exciting discoveries of new species of medium-to-large-sized animals.

In 1841, Heinrich Rathke (1793–1860), a pioneer in the science of animal development, stated that there really could be no doubt about the existence of the Norwegian "sea serpent." In 1858, Karl Müller (1818–99) devoted a

long series of articles, in *Die Natur,* the scientific journal he edited in Jena, to the tentative zoological identification of the diverse "mythical animals." And in 1877, the prominent evolutionist Fritz Müller (1821–97) discussed at length, not the traditional "sea serpent," but a supposed inland "freshwater sea serpent" (if one may venture to call it thus) inhabiting the waters of the Amazon and Orinoco basins, the Minhocão. In his scholarly opinion, this aquatic monster could well be "a gigantic fish allied to *Lepidosiren* and *Ceratodus,*" the intriguing lungfishes.

In fact, this suggestion had already been supported some 50 years before, in 1830, by the French explorer and botanist Augustin François César Prouvençal de Saint-Hilaire, better known as Auguste de Saint-Hilaire (1779–1853), who was one of the earliest contributors to cryptozoology (Saint-Hilaire 1830, 1847).

Even in France, some interest had indeed been shown for "fabulous animals," and this was rather unexpected in the country which boasted about its being the cradle of rationalism, and where it is often thought that expressing incredulity is a sign of reason. Baron Henri Marie Ducrotay de Blainville (1778–1850), a professor of zoology and comparative anatomy at the Paris Museum of Natural History, was among the first "sea serpent" supporters (Blainville 1818). In 1826, a distinguished historian and jurist, Eusèbe Baconnière de Salverte (1771–1839), whom François Arago (1786–1853), the physicist, considered as "one of the most erudite men" of his time, devoted a well-documented study to the dragons and monstrous serpents which had been mentioned in both fable and history (Salverte 1826, 1843). And under the pseudonym of A. Frédol, the prominent malacologist Alfred Horace Bénédict Moquin-Tandon (1804–63) reserved a portion of his book on the world of the sea to the story of the then still controversial discovery of gigantic cephalopods (Frédol 1865).

The First Wave of Popular Cryptozoography

It would certainly be unfair not to mention right away all the popular science writers of the last century who helped to make the general reader "monster-conscious."

As early as 1818 in Great Britain, an anonymous author signing himself "W." had written two very well-documented articles on the Kraken and on the "sea serpent," which were published in *Blackwood's Magazine* ("W" 1818a, "W" 1818b), which were even commented on by "W.B.," that is, William Blackwood (1776–1834), the editor himself ("W.B." 1818). The gist of these was taken over by the *Retrospective Review* of London, appeared in French in the *Revue Britannique* of Paris in 1835, and was adapted, the same year, in German by H. M. Malten in his *Bibliothek der Neuesten Weltkunde* (Library of Recent World-Science) published in Switzerland, and later reprinted in Germany in 1848. A rehash of the *Revue Britannique* version had, in the meantime, been concocted by Jules François Lecomte (1814–64) for the *Musée des Familles* of Paris (1836–37).

In 1863, a young Fellow of the British geographical and anthropological societies, William Winwood Reade (1838–75), published his narrative of a recent trip through what he called *Savage Africa.* This book contained not only first-hand information on the newly discovered gorilla, and about many tales of unicorns, tailed men, etc., but also some enlightening thoughts deserving to be used as principles of cryptozoology. For instance: "It must be laid down as a certain principle, that man can originate nothing; that lies are always truths embellished, distorted, or turned inside out. There are other facts beside those which lie on the surface, and it is the duty of the traveler and historian to sift and wash the gold grains of truth from the dirt of fable." Also: "Incredulity has now become so vulgar a folly, that one is almost tempted, out of simple hatred for a fashion, to run to the opposite extreme. However, I shall content myself with citing evidence reflecting certain unknown, fabulous, and monstrous animals of Africa, without committing myself to an opinion one way or the other, preserving only my conviction that there is always a basis of truth to the most fantastic fables, and that, by rejecting without inquiry that which appears incredible, one throws away ore in which others might have found a jewel. A traveler should believe nothing, for he will find himself so often deceived; and he should disbelieve nothing, for he will see so many wonderful things; he should doubt; he should investigate; and then he may perhaps discover."

In 1879, the English astronomer Richard Anthony Proctor (1837–88) followed these lines in writing chapters on the sea serpent and the mermaid in his *Pleasant Ways of Science.* The celebrated Victorian naturalist Philip Henry Gosse (1810–88) took a much broader view of the question of undiscovered animals in *The Romance of Natural History* (1860). He expatiated not only upon the problem of the Kraken and of the "sea serpent," calling the latter "the Great Unknown," but also upon many other cases of nondescript beings, including the African unicorn and the South American ape, which still puzzles us today.

The numerous tales which went around the world about apparently unknown man-apes or ape-men, made popular by the Darwinian revolution, such as Hanno's *Gorillas,* Livingstone's *Soko,* a Chinese tailed pygmy called the *Fese* (read *Fei-fei*), and the *Susumete* of Honduras, finally led Philip Stewart Robinson (1847–1902) to say of Professor Huxley in his own *Noah's Ark* (1882): ". . . if he were only to travel tomorrow into an unknown land, I am not at all sure that he would not ultimately emerge from some primeval forest hand-in-hand with the 'missing link.'" This is probably the first mention ever made of the possible survival into our time of some ancient form of hominoid.

In the meantime, in France, Armand Landrin (b. 1844) had devoted a

whole book to the various "monsters of the deep" (1867), which was later translated into English (1875). And in Germany, Emil Arnold Budde (1842–1921) resumed the discussion of both the "sea serpent" and its freshwater counterpart, the Minhocão, in his *Naturwissenschaftliche Plaudereien* (Chats About Natural Sciences) (1891).

What must be emphasized here is that most of these open-minded naturalists or popular science writers of the last century merely reported what had been said of all puzzling animals and reached conclusions about the more or less high probability of their real existence. If their achievements were to be given a technical name, one should speak of "cryptozoography" (description of hidden animals) rather than of "cryptozoology."

For a More Scientific Evaluation of "Monsters"

Just a handful of scientists ventured to suggest during the last century how—that is, in which zoological category—the still-unknown animals should be classified. Some, for instance, first accepted blindly that "sea serpents" were just enormous snakes. However, as soon as the first fossil remains of the huge reptiles of the Mesozoic era had been unearthed, and their outer appearance reconstructed, most adventurous naturalists related the "sea serpents" at once with the sea-faring representatives of this class, namely with the *Mososaurus,* which was like an enormous snake with paddles, and with the *Plesiosaurus,* which looked more like an outsized, long-necked turtle. As a matter of fact, this was just gross guesswork, as they relied only (and hastily) upon the general outline of the animals which had been sighted.

An English naturalist, the Reverend John George Wood (1827–99), certainly distinguished himself from all others when, while visiting the United States, he had an article on the "sea serpent" published in the June, 1884, issue of the *Atlantic Monthly,* which was the keenest ever written on the subject up to that time. In the light of a careful study of comparative anatomy, he concluded that, according to its movements and behavior, as well as to its morphology, the "sea serpent" which had so often been observed off the New England coast "belongs not to the saurians, but to a cetacean animal, which, if not an actual zeuglodon, has many affinities with that creature."

Early in the 19th Century, however, two wayward naturalists had already decided, long before the Reverend Wood, to take the matter more seriously, and to study with all the strict methods of science what was then known of the most popular sea monsters—and the largest ones at that: Pierre Denys de Montfort (1764–1820) and Constantin Samuel Rafinesque (1783–1840). They were both French-born, but the latter eventually became an American citizen.

Denys de Montfort worked at the Paris Museum of Natural History, and had been commissioned to write the volumes on mollusks in the additions

to Buffon edited by Charles Nicolas Sigisbert Sonnini de Manoncourt (1751–1821). In one of these three volumes, he described at length two cephalopods of truly gigantic proportions. He named the first "le Poulpe Kraken"; as a matter of fact, it was not a true "poulpe," that is, an octopus, but a squid, which is now known as the giant squid *Architeuthis.* The other one was "le Poulpe colossal," which was later to be described as *Octopus giganteus* by Addison Emery Verrill (1839–1926), (Verrill 1897a, 1897b), although subsequently repudiated by him as just "a piece of whale blubber" (Verrill 1897c). (*Octopus giganteus* has been more recently rehabilitated as, very probably, a true gigantic octopus by Forrest G. Wood and Joseph G. Gennaro [1971], but this remarkable achievement belongs to a later period in the history of cryptozoology.)

The second naturalist who dared to describe a sea monster according to scientific rules was Rafinesque, whom historians of science later hailed as "the most remarkable man to appear in the annals of American science" (David Starr Jordan [1851–1931]), or as "among all the naturalists who have ever worked on the American continent . . . the only one who might clearly be called a Titan" (Donald Culross Peattie [1898–1964]) (Jaffe 1944). Indeed, he was the very first one, in 1817, to write a "Dissertation on Water-Snakes, Sea-Snakes and Sea-Serpents." After studying all the then available information, he concluded that, owing to their anatomical traits, there were four different types of "sea serpents," two of them being actual but outsized sea snakes, the other ones fishes, one being apparently related to synbranchid eels (Rafinesque 1817, 1819).

Denys de Montfort and Rafinesque were so criticized, ridiculed, insulted and ostracized by other scientists because of these writings, that both finally died in appalling misery, the former in a Paris gutter, the latter in a Philadelphia garret, both at the age of 56. These two ill-fated geniuses deserve to be considered the first true forerunners of cryptozoology.

The Family Tree of Cryptozoology

Born in 1916, the author is currently dubbed the "father of cryptozoology," possibly because I actually coined the term "cryptozoology," but more probably because, since 1950, I have been the first zoologist ever to devote his professional life exclusively to the study of this particular field, and to the gradual development of its methodology. Even if this title were really well deserved, it should be only fair to add that cryptozoology has had several "forefathers," and, as we just saw, two outstanding "great-grandfathers," who were crowned by martyrdom in the cause of science.

To this fatal twosome one should add the German nature philosopher Lorenz Oken (1779–1851), mentioned before as the editor of *Isis,* who did not hesitate to include in his *Lehrbuch der Naturgeschichte* (Manual of Natural History) (1815) Denys de Montfort's two species of gigantic cephalo-

pods. He listed them under the respective names of *Sepia microcosmus* and *Sepia gigas,* thus making cuttlefishes of them, which later proved to be incorrect.

To summarize, the first quarter of the 19th Century saw the heroic deeds of three "great-grandfathers" of cryptozoology.

One should, however, not overlook here the important contributions of three naturalists who flourished during the second and third quarters of the century: Auguste de Saint-Hilaire (1779–1853), for his attempted identification of the fabulous Minhocão, as well as Roulin and Steenstrup, to whom we will return later because we owe to them the first "victories" of cryptozoology. The three of them could be considered "great-uncles" of the discipline.

In the same genealogical perspective, it is rather easy to identify the two "grandfathers" of cryptozoology, who won fame during the last quarter of the 19th Century. One of them was J. G. Wood (1827–99), who was the first to recognize the mammalian nature of most "sea serpents," although this honor could well be given also to either Roulin or Steenstrup. The other was the Dutch zoologist Antoon Cornelis Oudemans (1858–1943), who, in his epoch-making monograph *The Great Sea-Serpent* (1892), actually developed the original method which underlies all cryptozoological research.

It is incontestably the methodology which defines and constitutes a new science or scientific discipline. Just as writing pleasant stories about animals does not make the writer a zoologist, reporting encounters with unidentified beasts, or traditions about them, does not make the reporter a cryptozoologist.

Probably stimulated by the penetrating views of J. G. Wood, Oudemans wanted to get more accurate and more complete information, not only on the anatomy of the "sea serpent," but also on its physiology and behavior, and on its geographical distribution, with the purpose of trying to find its proper place, with the closest approximation possible, in the system of nature. To achieve this, he simply borrowed from the physicist and astronomer Ernst Florens Chladni (1756–1827) the statistical method which the latter had used to prove the extraterrestrial origin of meteorites. This was a truly revolutionary discovery, since these stones which were said to fall from the sky had for centuries been the laughing stock of most learned men.

What Chladni had done for meteoric stones, Oudemans did for "sea serpents." He painstakingly collected from books, magazines, and newspapers as many reports of sightings as he could find (altogether 187), eliminated the obvious hoaxes and cases of mistaken identity, and then extracted from the remaining ones all the available details, which he compared systematically, one by one, to see whether they fitted or not. Finally, he drew a sort of identikit picture of the animal, with full details about its way of life. It

accordingly appeared to be a kind of long-necked and long-tailed seal, which Oudemans described scientifically as *Megophias megophias,* the generic name having been taken, with due credit, from Rafinesque.

Cryptozoology was born at last. Oudemans' great opus can be considered as the true starting point of the new discipline, much as *Recherches sur les Ossemens Fossiles* of Cuvier marks the beginnings of paleontology as a science.

Oudemans' views were soon adopted by some reputable zoologists, such as the Austrian oceanographer Emil von Marenzeller (1845–1918) as early as 1894, and later on by his Franco-Rumanian colleague Emile G. Racovitza (1868–1947), and by the leading French mammalogist Edouard Louis Trouessart (1842–1927). The latter two espoused Oudemans' thesis in 1903, after numerous "sea serpent" sightings had been made by the officers and crew of several ships of the French Navy off the coast of Indochina from 1893 on. Ten years later, the director of the National Museum of Natural History of Paris, Jean Octave Edmond Perrier (1844–1921), declared that Oudemans' book had been a "veritable act of courage" (Perrier 1913).

Already in 1899, however, a Swedish college teacher, Peter Olsson (1838–1923), had gone much further. As a "monster" was said to live in the great lake Storsjön, he made local inquiries, gathered 22 trustworthy reports, and concluded from their analysis that it was an unknown pinniped similar to Oudemans' *Megophias* which inhabited this stretch of fresh water. This was actually the first scientific approach to the case of an unidentified lake animal, long before the outbreak in 1933 of the Loch Ness "monster" problem.

Three Major Successes of the Cryptozoological Approach

It is often stated nowadays that cryptozoologists are wasting their time and energy on a wild goose chase, since no unknown animal has ever been found by them. Such yarns betray a great ignorance of the history of zoology. Long before a true method of research had been defined by Oudemans, and in any case before such a method was systematically applied, some signal victories had been achieved empirically.

The first brilliant success of the cryptozoological approach was the discovery of the mountain tapir by François Désiré Roulin (1796–1874). Here is what this traveler and naturalist disclosed before the French Academy of Sciences on February 9, 1829: "Quite a long time before I actually became fully acquainted with this second species of American tapir, I had been led to suspect its existence, not, I must say, for general reasons, but on the mere strength of old Spanish chronicles. Some of these authors lent, indeed, to the tapir [a] thick hair of blackish brown color, a character which does not fit at all with the tapir of modern naturalists . . ." (Roulin 1835).

This shows very clearly that the very first task of cryptozoology is biblio-

graphical research: the patient, sometimes dull, and always time-consuming perusal of books on travel, exploration, or just hunting, of old or exotic chronicles, and of ancient or foreign works on natural history.

When Roulin proposed to name the new species *Tapirus pinchaque* it was because the latter word was the name of a fabulous animal of Indian folklore in the Popayan region of Colombia (actually *pinchaque* or *panchique,* which meant something like "ghost" or "werewolf"). Roulin was quite convinced that the belief in this much-feared monster was based upon the rare and not well known tapir of the high Andes. He even went so far as to suggest that the white-backed tapir of India had similarly inspired the legendary griffin of Greek antiquity. And he added this apt comment, which emphasizes the second important task of cryptozoology, that is, the careful analysis of myth, legends, and folk-tales of all cultures and all races in search of "monsters" which could eventually be demythicized: "Having mentioned a *fabulous animal,* I feel bound to justify myself for entertaining the Academy with a subject so irrelevant to its conventional concerns. It is, however, obvious that this kind of investigation should not be overlooked by the natural sciences. It is, indeed, impossible to trace the history of animals through ancient times without having at every moment to strip the real facts from their halo of fables, and if we do not have to discard more of these it is just because this process of elimination has been going on unsuspected for thousands of years" (Roulin 1835).

A second outstanding success of cryptozoology, and of a much more dramatic nature under the circumstances, was the scientific description in 1856 of the giant squid by the Dane Johan Japetus Steenstrup (1813–97). This scholar had first established, on historical evidence only, that the Kraken, the tentacled bugaboo of Scandinavian folklore, and a much more incredible monster than the "sea serpent" itself, was just a giant cephalopod. In his opinion, it was not an octopus, as Denys de Montfort had surmised, but an outsized calamary like the two large specimens which, according to ancient public records, had been stranded in 1639 and 1790 on the coast of Iceland (Steenstrup 1849). The Danish scientist later suggested that another fabled sea monster, the *Monachus marinus* (sea monk) of Rondelet, was likewise based upon a large squid caught in a net on the Swedish coast in 1550 (Steenstrup 1855). When he finally laid hands on the enormous beak of another specimen, which had been found dead on the shore of Jutland, on the territory of Denmark itself, and on the slightly different beak of a specimen found afloat between Bermuda and Carolina, he described the Scandinavian species as *Architeuthis monachus* and the Atlantic one as *Architeuthis dux* (Steenstrup 1857). (For the full story of this cryptozoological feat, see Heuvelmans 1958.)

A third prominent success of cryptozoology, the discovery of the okapi, was a worldwide sensation in the early 1900's. Henry Morton Stanley (1841–1904) had casually reported, in 1890, that the Wambutti pygmies "knew a donkey and called it *atti.*" This led Sir Harry Hamilton Johnston (1858–1927), then governor of Uganda, to organize a patient and obstinate search, which would lead to the discovery of the existence of such an improbable animal as an alleged forest-zebra. It was thus named *Equus johnstoni* by Philip Lutley Sclater (1829–1913) on the basis of some striped strips of skin (Sclater 1901). It was only after a careful study of a whole skin and of two skulls that Sir Edwin Lankester (1847–1929) came to the conclusion that the *atti,* rather known locally as *o-api* or *okapi,* was not a horse at all, but a sort of short-necked giraffe, more or less closely related to a Miocene fossil from Greece, *Helladotherium.* Deserving a new genus of its own, the surviving proto-giraffe became thus *Okapia johnstoni* (Lankester 1901), and caused an excitement never known before in zoological circles, and even in the daily press.

Discoveries Which Could Have Been Made Earlier with the Help of Cryptozoology

It is a fact that many species of medium-to-large-sized animals could have been discovered at a much earlier date if zoologists had realized the importance of a cryptozoological approach. This is due, first of all, to the fact that most animals are generally known by the natives of the area.

The white-backed tapir of India, for example, was officially discovered by Western science in 1816, but it had been known to the Chinese and Japanese since time immemorial as the fabulous iron and copper-eating *Mé* (Roulin 1835).

The pygmy hippopotamus was described in 1849 by Samuel George Morton (1799–1851) after a set of skulls had been first revealed to him 6 years before by a simple traveler's tale which he rather disbelieved (Morton 1844). As Joseph Leidy (1823–91) soon demonstrated, it was not just a distinct species of hippopotamus, but a very different animal deserving to be put in the new genus *Choeropsis* (Leidy 1852).

The lowland gorilla, scientifically named in 1847 by the Reverend Thomas Staughton Savage (1804–80) and Professor Jeffries Wyman (1814–74), had already been fairly well described in the early 1600's as the *pongo,* a sort of "abdominable man-of-the-woods," by the English adventurer Andrew Battel (Purchas 1625).

The giant panda, found in 1869 in Szechwan by Father Jean-Pierre Armand David (1826–1900), was already mentioned as the *bei-shung* (white bear) in a Chinese manuscript dating from the Tang Dynasty, 621 A.D. (Morris and Morris 1966).

The Gerenuk or Waller's giraffe-necked gazelle, scientifically christened in 1878 as *Litocranius walleri,* could have been described much earlier since its most unusual outline appears on a rough rock carving from the east bank

of the Nile, between 4,000 and 2,900 years old, and even, very clearly this time, on an Egyptian bas-relief dating from Ramses II's reign, in the 13th Century B.C. (Schomber 1966).

Grévy's zebra was discovered in 1882 in, strangely enough, the Jardin des Plantes, the zoological garden of Paris, after it had been presented to the French president Jules Grévy by Ménélik I, Emperor of Abyssinia. It later appeared that it had already been figured by Aldrovandu in 1642 and by Hiob Ludolf (1624–1704) in 1681 (Scherren 1905).

The mountain gorilla, the largest of all apes, was scientifically described as recently as 1903, although John Hanning Speke (1827–64), the explorer, had already heard, in 1861, from the subjects of King Rumanika in Ruanda of "monsters who could not converse with men, and never showed themselves unless they saw women pass by: then, in voluptuous excitement, they squeezed them to death" (Speke 1863).

Even the coelacanth, the so-called "fossil fish" of the Devonian period found alive in 1938, had been known for ages by the natives of the Comoro Islands, who called it *kombessa.* They not only ate its salted and dried meat, but used its rough scales in repairing their bicycle tires. Moreover, a perfectly accurate silver model of a coelacanthid, at least a century old and serving as an ex-voto, was discovered in 1964 in a fisherman's church near Bilbao, on the Atlantic coast of Spain (Sylva 1966).

The New Wave of Cryptozoology

From the beginning of the 20th Century on, especially because of the sensation created by the well-guided discovery of the okapi, quite a number of natural science writers, and even a few professional zoologists, started devoting articles and portions of books to some of the "mystery" animals which were still apparently undescribed.

Mention should be made here of some popular science writers of France, such as Henri Eugéne Coupin (b. 1868) (1904); Victor Forbin (b. 1864), essentially a great reporter (1920); Norbert Casteret (b. 1897), the founder of French speleology, and his wife Elisabeth (1926); René Thévenin (1877–1967), a prominent author (1931); and Louis Marcellin (1949); of some renowned Englishmen from various spheres of action, such as the big-game hunter and fire-arms expert Walter Winans (1852–1920) (1920); the athletics promoter Frederick Annesley Michael Webster (b. 1886) (1920); Captain William Lionel Hichens (1874–1940), late of the Intelligence and Administrative Services of East Africa, who first wrote under the pseudonym of "Fulahn" (Fulahn 1927, Hichens 1937); and those prolific Fortean authors, Harold Tom Wilkins (1891–1960) (1950); Alfred Gordon Bennett (1901–62) (1953); and Eric Frank Russell (1905–78) (1957); and finally of naturalists, such as the French-Canadian Henry Tilmans (1905); the Catalonian Spaniard Rossend Serra i Pagës (b. 1863) (1923); and the Australian mineralogist Charles Anderson (1876–1944), director of the Australian Museum (1934). It was in 1931 that the famed wild animal catcher Joseph Delmont (1873–1935), after having traveled all over the world for 20 years, wrote this sentence which his personal experience makes particularly significant: "Even today there are in every part of the world inaccessible areas where there certainly exist wild creatures unknown to naturalists" (Delmont 1931, 1932).

Among the wave of 20th Century authors inspired by the problem of still undiscovered animals, the following science writers must, of course, be consulted for their deserving attempts at a synthesis of the whole question, or some of its specific cases: in Britain, Frank Walter Lane (b. 1908) (1937a, 1937b, 1939, 1941); Maurice Burton (b. 1898), then of the British Museum (Natural History) (1954, 1955, 1959); and Richard Carrington (b. 1921) (1957); in Germany, Richard Hennig (1875–1934) (1950, 1957); in the United States, Alpheus Hyatt Verrill (1871–1954), who was Professor A. E. Verrill's son (1948); Ivan Terence Sanderson (1911–73) (1947, 1948a, 1948b, 1948c, 1950, 1959a, 1959b); and, above all, Willy Ley (1906–69), who had studied paleontology and the history of zoology at the Universities of Berlin and Koenigsberg (1941, 1948, 1951, 1955, 1959).

It should be stressed, incidentally, that the versatile Canadian writer Richard Stanton Lambert (b. 1894) seems to have been the first to draw attention, in a book, to the problem of the North American Sasquatch (1954).

Some books on actual fieldwork written by brilliant laymen during the same period also deserve to be listed as important contributions to cryptozoology: Commander Rupert Thomas Gould's (1890–1948) works on the "sea serpent" (1930) and on the Loch Ness Monster (1934); Kenneth Cecil Gandar Dower's (1908–44) book on the spotted lion of Kenya (1937); Ralph Izzard's journalistic reports on the *buru* of Assam (1951) and on the Yeti of Nepal (1955); Constance Whyte's careful essay on the Loch Ness Monster (1957); and C. M. Poulsen's work on sea monsters, supervised and introduced by the Danish oceanographer Anton Frederick Bruun (1901–61) (1959).

From Pinpoint Attempts to a First Summing-up

Strangely enough, none of these numerous authors, even the best-versed in natural history, ever thought of classifying zoologically and with some accuracy some of the sundry mystery animals they were writing about. Once again, we have been dealing here with cryptozoography rather than cryptozoology. So, a special mention should be made of some pinpoint attempts at identification made during the present century by some particularly bold naturalists or zoologists.

Carl Hagenbeck (1844–1913) was not exactly a zoologist, but as "the king of zoos," the great German animal dealer was exceptionally well-acquainted with the world's megafauna, and can thus be considered an equally reliable authority. So, he certainly impressed scientists as well as laymen when he

revealed in his memoirs (1909) that he had been receiving reports from several quite distinct sources of the existence of an immense and wholly unknown animal, "half elephant, half dragon," in the great swamps of equatorial Africa, and more especially when he added: "From what I have heard of the animal, it seems to me that it can only be some kind of dinosaur, seemingly akin to the brontosaurus."

In 1913, the British ornithologist Frank Finn (1868–1938) was so struck by the recent discovery of the marsupial "mole" (*Notoryctes*), the okapi, and the giant forest hog (*Hylochoerus*) that he wondered whether a pygmy water elephant, which had just been reported from Central Africa, could not be a kind of local tapir.

In 1926, Australia's leading mammalogists, Albert Sherbourne Le Souef (1877–1951) and Harry James Burrell (1873–1945), included in their handbook *The Wild Animals of Australasia* a fairly large striped marsupial "cat" from North Queensland on the mere strength of numerous sightings. This was to be followed by Ellis Le Geyt Troughton, Curator of mammals at the Australian Museum, in the different editions of his *Furred Animals of Australia* (1941, 1954, etc.).

In 1929, the German natural science writer Wilhelm Bölsche (1861–1939) devoted a small booklet to the legend of the dragon, which in his opinion had been inspired by the survival of some Mesozoic reptiles, such as dinosaurs, until today. The strongest card in his hand was the scientific report of the Likouala-Congo Expedition of 1913–14, headed by Captain Freiherr von Stein zu Lausnitz. In this document, the German officer had spoken with a wealth of details of the *mokele-mbembe,* an amphibious animal as big as an elephant but with a long slender neck and an equally long tail, which had been described to him by the riverside villagers of the lower Ubangi and Sanga rivers.

In 1933, a school principal of Bozen (now Bolzano) in northern Italy, Jakob Nicolussi, suggested that the fear-inspiring and fabled *tatzelwurm,* a stumpy reptile or amphibian, about 3 feet long, of the Swiss, Bavarian, and Austrian Alps, could be a European species of the genus *Heloderma,* represented in America only by the gila monster of Texas, Arizona, and Sonora, Mexico (*H. suspectum*), and the Mexican beaded lizard (*H. horridum*).

In 1934, the British entomologist Malcolm Burr (1878–1954) concluded from a careful analysis of the "sea serpent" literature that these should be classified within the class Amphibia.

In 1935, Louis Seymour Bazett Leakey (1903–72), now of *Zinjanthropus* fame, tried to explain the rumors lingering in East Africa about an alleged bear of unparalleled ferocity, known to the British colonists as the Nandi Bear, by the present existence of the *Chalicotherium.* It so happened that this strangely clawed ungulate, as big as a horse, had been contemporaneous

with the okapi during the Miocene and Pliocene periods, and could thus have survived as well in the same environment.

In 1944, Mervyn David Waldegrave Jeffreys (1890–1957), professor at the University of the Witwatersrand, in Johannesburg, reviewed extensively all African tales about mysterious "flying dragons," and concluded that "the suspicion lingers that perhaps in some hidden corner of Africa a few shy pterodactyls still lurk."

In 1945, William Charles Osman Hill (1901–78), who was to become one of the world's leading primatologists, wrote a very well-informed study of the long-haired pygmies of Ceylon (now Sri Lanka), the Nittaewo, exterminated at the end of the 18th Century, but which may have had a still-living representative in Sumatra, the *sedapa* or *orang pendek.* According to Osman Hill, they both could be recent relatives of the fossil "ape man" of Java, then known as *Pithecanthropus* and now known as *Homo erectus.*

In 1947, the German zoologist and philosopher of science Ingo Krumbiegel (b. 1903) devoted a study of thorough insight to an amphibious monster of Angola, locally known as the *coje ya menia* (water lion). From the footprints it left and the terrible wounds it generally inflicted on hippopotamuses, Krumbiegel deduced that the animal had to be either a huge saber-toothed cat or a gigantic monitor lizard like the Komodo dragon, or even possibly one or another saurian surviving from the Jurassic period.

Only in 1950 did somebody finally try to give a panoramic and duly documented view of the subject of still unknown animals, if only schematically, and it is the same Dr. Krumbiegel. In a small booklet entitled *Von Neuen und Unentdeckten Tierarten* (Of New and Undiscovered Animal Species), he first listed the major zoological discoveries made during the last hundred years or so, and afterwards all and sundry unidentified animals of medium to large size about which persistent rumors had circulated in the different parts of the world (Krumbiegel 1950a).

Also in 1950, Dr. Krumbiegel reminded us in another article that some of the first naturalists to study the fauna of New Zealand reported sightings, the discovery of footprints, or mere rumors of an otter-like animal living in the waters of South Island, and which the Maoris called *waitoreke* (Krumbiegel 1950b). The presence of this animal, still undiscovered today, on a far-off island which, except for bats (and for rats and dogs introduced by man), has *no* native mammals, had inclined Wilhelm Bölsche, already mentioned above, to surmise that it could be allied to the Monotremes, or to an even older group of proto-mammals (Bölsche 1896).

So, in the very midst of the present century there was already extant not only the model study of Oudemans on the "Great Unknown" of the sea, and, among a host of more or less judicious suggestions about the zoological identity of some mysterious land animals, an equally exemplary work by

Osman Hill on one of the latter, seemingly a close relative of modern man, but even a brief summary of the whole cryptozoological situation all over the world.

The New Discipline at Last Defined and Named

This is where the author came in, essentially as an inquirer aiming at exhaustivity, as a synthesizer of all previous research, as a theoreticist in the light of epistemology, and as the refiner of the methodology of the new discipline of zoology. I think the cryptozoological spirit was probably instilled into me during my callow youth by three major works of fiction: *Twenty Thousand Leagues Under the Sea* by Jules Verne (1828–1905), because of the meeting with a giant squid and with other sea monsters (Verne 1870, 1874); *The Lost World* by Sir Arthur Conan Doyle (1859–1938), because it supposes the survival of prehistoric animals on the top of an isolated plateau in South America (Doyle 1912); and *Les Dieux rouges* (The Red Gods) by Jean d'Esme (pseudonym of the viscount Jean d'Esmenard) (b. 1893), because it is based upon the existence in Indochina of an unknown tribe of wild hairy men or ape-men (Esme 1928). It was, however, after having read in the *Saturday Evening Post* of January 3, 1948 a rather sensation-seeking article by Ivan T. Sanderson about the possible survival of dinosaurs in Africa (1948a), that I decided to write a wishfully exhaustive book on all similar cases. I happened to have accumulated for years a great amount of information on the subject, particularly while studying zoology at the Free University of Brussels. I was, of course, not aware at that time of the imminent publication of Krumbiegel's digest, which was to prove most helpful to my work.

I worked for four full years on my project, treating the various cases—several dozens of them—quite matter-of-factly, and giving for the first time all available references on them, following established practice in scientific works. After a thorough analysis of my informative material, I attempted to classify all the relevant animals as precisely as possible. Out of this vast enterprise arose, first, a few preliminary articles, published in a popular science magazine (1952a, 1952b, 1952c, 1952d), then, finally, a large opus limited to land animals, *On the Track of Unknown Animals,* which came out in French in 1955. It was subsequently translated into a dozen other languages, which explains the impact this work has had on a worldwide scale (Heuvelmans 1958a).

However, it was only while subsequently tackling the problem of the "sea serpent," which I was to deal with in a companion volume to the former, *In the Wake of the Sea-Serpents* (Heuvelmans 1968), that I fully realized that Oudemans' method was far from perfect, and had to be considerably enriched and refined. Above all, my honored Dutch master had made a big mistake in taking for granted that *all* "sea serpents"—i.e., all elongated marine animals of large size still unknown to science—were of one and the same species. It had gradually become apparent to me that some of them could not even belong to the same class of vertebrates: outside of one large reptile—certainly not a snake—there seemed to be not only pinnipeds and archaic whales involved, but a host of fishes, obviously unrelated to each other. To disentangle successfully this intricate problem, I finally had to resort to the most primitive computer: the punched card system.

I tried to perfect Oudemans' simple statistical approach, only efficient for the enhancement of a single isolated phenomenon, which is rarely the case in cryptozoological matters. I thus developed a generalized method of analysis which could be used—without preconceived or prejudiced ideas—in all instances of lasting rumors or ancient traditions concerning apparently unknown animals.

For three years I studied the history of the largest cephalopods, a problem which had been partly solved by the discovery of the almost incredible giant squid (*Architeuthis*), and summarized this research in a book originally published in French in 1958 (Heuvelmans 1958b). I then devoted the seven subsequent years to the study of the "sea serpent" problem (Heuvelmans 1965, 1968). It was while doing this, during the late 1950's, that I felt the need to give a name to the totally new discipline of zoology my research implied. This is how I coined the word "cryptozoology," the science of hidden animals, which I used extensively in my professional correspondence. It first appeared in print in 1959, when one of my correspondents, Lucien Blancou (1903–83), then Chief Game Inspector of the French Overseas Territories, dedicated his book *Géographie Cynégétique du Monde* (Cynegetic Geography of the World) to "Bernard Heuvelmans, maître de la cryptozoologie" (master of cryptozoology). The term is now widely used all over the world, and has already entered several French encyclopedias and dictionaries. But this belongs now to the flourishing period of cryptozoology, which will be dealt with elsewhere in some future article.

The Exemplarity of the Discovery of Neptune

It should be clear by now that the essence of cryptozoology lies in the collection, analysis, comparison, sifting out and synthesis of all available information on animals still absent from our zoological catalogs. It is the final result of these activities which will help us locate the relevant animals with the greatest accuracy, to recognize them, and to teach us where, when, and how to approach them, possibly lure them into a trap or a net, finally capture them if it is only on film, or ideally establish a friendly relationship with them.

To go trekking through the Himalayas with the hope of meeting a Snowman, or diving into Loch Ness, or wading in equatorial swamps in search of living dinosaurs is of course greater fun, but it is not true cryptozoological research unless it is properly conducted, and also assisted by local peoples.

No more than dredging the ocean floor, searching the dark waters of subterranean caves, or just hunting butterflies or bugs with a net. All these are mere zoological tasks: either blind attempts, exploratory tests, or processes of control. As a matter of fact, true cryptozoological research in the field consists, first of all, in collecting more complete or more recent information from the local people, and secondarily, in looking for possible concrete evidence of the existence of the animal species one is tracing.

The ambitious aim of cryptozoology is to make one able to describe an animal scientifically *before* it has been captured or collected. Such a feat can best be compared to the discovery in 1816 of the planet Neptune by theoretical astronomer Urbain Le Verrier (1811–77). It was by studying a slight perturbation in the elliptic motion of Uranus that the French astronomer deduced from it the presence of a previous unknown planet. Le Verrier told his German colleague Johann Galle (1812–1910) exactly where to look if he wanted to see the new planet, and how bright and big it would appear. Two or three days later, Galle discovered Neptune within a degree of the location Le Verrier had indicated. Camille Flammarion (1842–1925), the popular science writer, reported that, although Le Verrier had been appointed director of the Paris Observatory for his sensational achievement, he never even bothered to look at the planet he had discovered.

It is doubtful whether a cryptozoologist would ever have the admirable detachment shown by this strict theoretician if a specimen of the unknown species he had described were ever caught or found stranded.

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(Because of the historical significance of this article, the complete names of the individuals discussed have been retained [both in the text and in the references], even when they were [or are] known more commonly by shorter, abbreviated names.—Editor.)